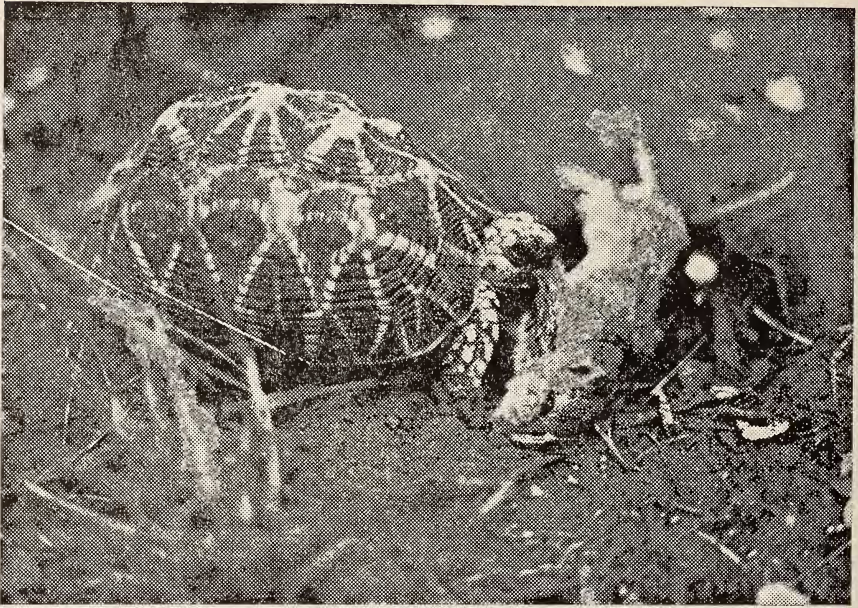


sions we have noticed that the tortoises show an interest in dead rats which had been placed for the snakes. The tortoise has difficulty in breaking the tough rat skin but will consume the flesh of a rat's leg



Geochelone elegans starts to feed on a dead rat.

in about half an hour of pulling and "chewing". Pritchard in his LIVING TURTLES OF THE WORLD mentions that *G. elegans* is known to eat snails, but flesh eating by land tortoises seems a phenomenon and perhaps applies only to captive specimens deprived of a complete natural diet.

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February 10, 1974.

R. WHITAKER

10. BEHAVIOUR OF THE AGAMID GARDEN LIZARD, *CALOTES VERSICOLOR*

Only within the last few years, thermoregulation in tropical lizards has been investigated. The general conclusion is that selection of habitat, behaviour and thermal sensitivity are closely interrelated. The temperature is perhaps the most important limiting factor in the ecology of an ectotherm.

The object of this report is to study some aspects of observation on behaviour of the agamid garden lizard, *Calotes versicolor*.

Activity of the lizards: The activity of the *C. versicolor* was studied in great detail on a section of the Ravenshaw College campus area during the period June to December, 1971. The study involved not only behavioural studies but also counting of the population, sex-ratio observed on the plot at different times of the day. During this study no distinction with respect to size or stage of thermoregulatory behaviour was made but the conditions of temperature and light were noted.

Diurnal activity: *C. versicolor* is a diurnal lizard. The lizard starts activity in summer at about 6.00 a.m. and at about 7.00 a.m. during winter. Morning active phase may extend up to sunset with a short period of rest at noon. However, these active phases are dependent on factors like light and rain. During bright and warm weather most of them were found at rest under some shade in the field. During rain or stormy weather, lizards, took shelter on trunks of trees or in bushes. Observations of marked adults indicate that most of them were active throughout the morning when the weather conditions are normal and many remain in the bushes.

The lizards were found active in the morning hours when the sky was clear. Many of them left the bushes before 11.00 a.m. under 'cloudy' conditions of the sky, the lizards took longer time to reach their activity threshold and they were seen basking on the rock or stem till noon. The intensity of light in rock and stem shadow was found to vary from c. 100-400 and 75-375 ft. respectively.

Nocturnal activity: The adult and juvenile (S-V length range: 24-60 mm) of *C. versicolor* were observed to be inactive during nights irrespective of weather conditions. The lizards just rested or slept under the bush or on tree trunk or on branches of the tree.

Sleeping habits: The sleeping habits of adult lizards were observed. *C. versicolor* was observed to prefer the tree trunks and branches. They slept in a horizontal position, in such a habitat with their bellies touching the tree. During sleep, the legs of the garden lizard were folded close to the body and the tail was fully extended. The average height of the place to where they climbed and slept was 1.5 m (Range: 0.4-3.5 m). Sometimes, rarely both, adult males and females were observed sleeping close to each other irrespective of seasons at about 6.00 p.m. and they awoke at about 6.00 a.m.

Thermoregulation and temperature preferences: The adults and juveniles of *C. versicolor* were seen basking during sunshine. Mature adults were observed to spend more time for basking especially orientating their bodies to receive maximum sunshine. The basking range in *C. versicolor* is up to 35.0°C.

Since the basking behaviour was observed only during sunshine, it is considered to be related to the thermoregulation of the lizard. Furthermore, the activity of the lizard was found to be influenced mostly by the environmental temperature. The preferred temperature (is the mean of normal activity range) for the garden lizard, *C. versicolor* studied here fell around 36.0°C.

The body temperature in *C. versicolor* was higher than their habitat temperature (both air and substratum) during day time but almost same during night.

Thermal thresholds: The thermal thresholds (°C) in *C. versicolor* were observed as follows:—

1. Minimum voluntary tolerance:	24.0-27.5
2. Maximum voluntary tolerance:	38.1-40.0
3. Basking range:	27.6-35.0
4. Normal activity range:	35.1-38.0
5. Preferred temperature :	36.0
6. Critical thermal maximum:	45.0
7. Lethal temperature:	45.5

Moulting behaviour: *C. versicolor* moults frequently, starting with the head and finally the posterior region. During moulting the colour of the lizards was dark brown. The moulting takes place from 3 to 10 days.

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11. COBRA WITH KINGFISHER CAUGHT IN THROAT

Recently a cobra (*Naja n. naja*) was brought to us alive with the head and bill of a white-breasted kingfisher (*Halcyon smyrensis*) caught in its throat. The long beak and broad head of the bird was too much for the cobra to swallow or regurgitate and the snake would probably have died if we hadn't carefully removed the bird.